Climate change and global warming – major threats to humanity

Sea levels are rising and oceans are becoming warmer. Longer, more intense droughts threaten to destroy crops, wildlife as well as supplies of freshwater. From polar bears in the Arctic and penguins in the Antarctic to marine turtles off the coast of Africa and pandas in the temperate forests of South-west China, our planet's diversity of life and biology is at risk from the changing climate.

The Global Industrial Revolution

How has climate change and global warming started to affect all human and animal life? To know how all this started we must look at the global industrial revolution, which took place between the late 1700s and the early 1800s.

It transformed economies that had been based on agriculture and handicrafts into economies based on large-scale industry, mechanised manufacturing, and the factory system. New machines as well as sources of energy were introduced, which increased global greenhouse gas emissions.

Greenhouse gases

These greenhouse gases include carbon dioxide, methane, nitrous oxide, and water vapour (all of which occur naturally) and fluorinated gases (which are synthetic – artificially created by chemical methods).

These gases trap the sun's heat in the atmosphere, which is what helps the Earth to maintain a stable temperature of 58 0 F, or 14 0 C. But, too much of these greenhouse gases can cause the Earth's atmosphere to trap more and more heat. This causes the global temperature to increase over time.

Deforestation

Deforestation, or cutting down forests has also been identified as a potential cause of global warming, which is a major part of climate change.

Since plants convert carbon dioxide into oxygen, they play a vital role in the fight against climate change but because of the increase in population, space for living is running out.

People are desperate and so, they turn to destroying the few untouched parts of nature.

Global carbon emissions

To avoid the worst effects of climate change, we need to dramatically reduce global carbon emissions.

But this is easier said than done, because with the advancement of technology we have become increasingly dependent on energy sources which release a high percentage of greenhouse gases into the atmosphere.
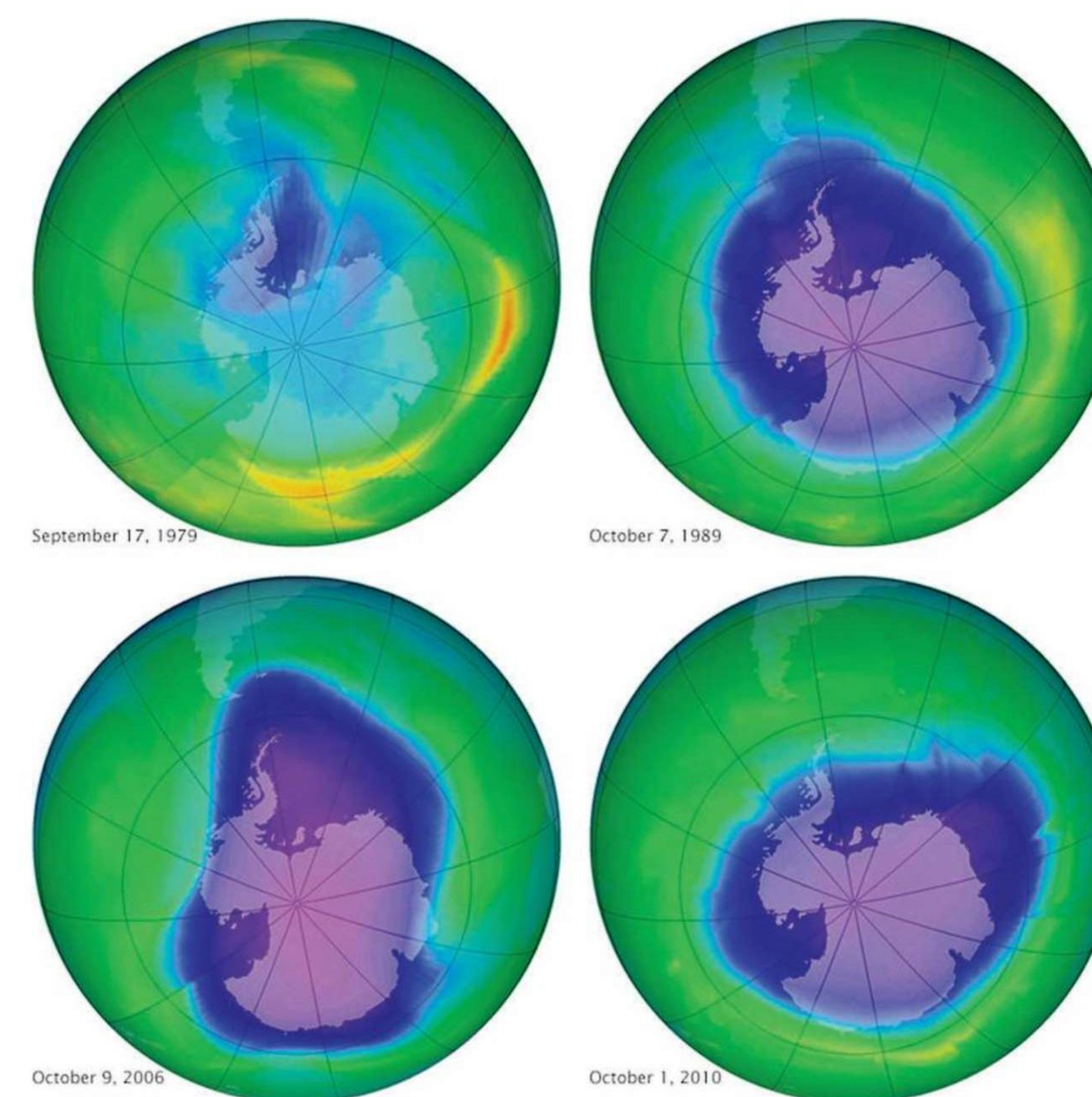
Global warming and climate change have had adverse effects on the environment as well as on animals.

The Western US, Northern Siberia, Central India, and Eastern Australia are a few of the regions already having an increase in blazes. Multiple studies have found that climate change has already led to an increase in wildfire season length, wildfire frequency, and burnt areas.

The wildfire season has lengthened in many areas due to factors including warmer springs, longer summer dry seasons, and drier soils and vegetation.

Therefore, it is time that we took steps to secure a livable Planet Earth for the future generations.

Let's take a look at cars – an average passenger vehicle emits about 4.6 metric tons of carbon dioxide, themost prevalent and dangerous greenhouse gas, into the atmosphere each year. In 2019, there were approximately 1.4 billion motor vehicles globally – therefore, almost 6.44 trillion metric tons of CO2 is released to the atmosphere annually, from cars alone.

Steps have been taken to minimise this, though. New technologies have been introduced, such as the hybrid engine, the electric car and the hydrogen fuel cell car, to name a few.

Refrigerants

Refrigerants, which are used in a number of home appliances including refrigerators, freezers, air conditioners and water coolers, have been found to have a significant effect on climate change when directly introduced to the environment – mostly by leaking.

Many refrigerants, such as chlorofluorocarbons (CFCs) damage the ozone layer, while others are extremely potent greenhouse gases.

In fact, one kilogram of the refrigerant R410a has the same greenhouse impact as two tonnes of carbon dioxide, which is the equivalent of running your car for six months.

The ozone layer

This brings us to the ozone layer. In the early 1980s, through a combination of ground-based and satellite measurements, scientists began to realise that the ozone layer, which can be likened to Earth's natural sunscreen, was thinning dramatically over the South Pole each spring. This thinning of the ozone layer over Antarctica came to be known as the ozone hole.

September 17, 1979   October 7, 1989

October 9, 2006   October 1, 2010

This shows the collective steps taken by the world as a whole to minimise the environmental impact of these ozone depleting substances, or ODS.

Through the Protocol, countries aim to completely stop the usage of hydrochlorofluorocarbons (HCFCs) and hydrofluorocarbons (HFCs).

What can we do to save the environment? First, we can start by saving electricity at home, because much of our electricity is still powered by oil, coal and gas.

We can also take public transport, cycle or walk instead of using our own private vehicles, as the world's roads are clogged with vehicles, many of them burning diesel or petrol while stuck in traffic. Walking or riding a bike instead of driving will reduce greenhouse gas emissions – and help your health and fitness.

For longer distances, consider taking a train or bus. And use a carpool whenever possible.

Even though this is called a 'hole', no place in the Earth's atmosphere is ever depleted of ozone. It's just the thinning of the ozone layer, at some points below two millimetres (2mm). This can be extremely harmful to humans as it increases the amount of ultraviolet (UV) radiation that reaches the Earth's surface; this in turn increases the rate of skin cancer.

The Montreal Protocol

Governments were quick to identify this and they took a united step towards the future of the ozone layer

with the Montreal Protocol that was adopted on September 15, 1987 - the Montreal Protocol is to date the only UN treaty ever that has been ratified by every country. In fact all 198 UN Member States ratified it.

Vegetables and grains

Also, eating vegetables and grains, if you didn't know it, can reduce your impact on the environment.

Producing plant-based food generally has fewer greenhouse gas emissions and requires less energy, land and water.

Through simple measures such as this, we can do our part to save the global climate, and tackle the grave issue of global warming.

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